

ABSTRACT

SYSTEM, METHOD, AND APPARATUS FOR AERODYNAMIC DIVERTER INTEGRATED WITH A DIFFUSER IN A BYPASS CHANNEL FOR APPLICATIONS IN A DISK STORAGE DEVICE

[0035] A device streamlines air flow inside a hard disk drive with a stationary afterbody that is located adjacent to each of the disks. A diverter portion of the device enhances the volumetric flow of air through the diffuser. The overall function of the device effectively expands the air flow so that the speed of the air flow gradually decreases while pressure increases. This design reduces losses in system momentum due to sudden expansion of the air in the drive. In addition, air flow moving toward the disk pack may be contracted to allow efficient energy conversion from pressure energy to kinetic energy prior to merging of the bypass air flow with the air flow among the disks.